REMARKS

By this amendment, claims 5-27 have been cancelled and new claims 31-34 have been added in this application. Currently, claims 1 and 28-34 are pending in the application.

Examiner Pendleton is thanked for the courtesies extended to the undersigned during the personal interview on July 19, 2006. During the interview, applicants' representative pointed out that independent claim 1 currently recites "said rectifying grid placed in said duct downstream of and spaced from said first rectifying net" and "said second rectifying net placed in said duct downstream of and spaced from said rectifying grid". Applicants' representative also pointed out that Christenson did not disclose or suggest disposing the plate 22, the honeycomb section 24 and the screen 28 such that they were spaced apart from each other as currently claimed.

Claims 1 and 28-30 were rejected under 35 USC 103(a) as being obvious over Christenson. The Examiner admitted that Christenson did not disclose at least one second rectifying net placed in the duct 18 downstream of the rectifying grid (honeycomb section 24). However, the Examiner believed that it would have been obvious to

modify Christenson to include a second rectifying net downstream of the rectifying grid for the purpose of improving its noise control function.

This rejection is respectfully traversed in view of the amendments to the claims and the following remarks.

The present invention relates to an active noise control system for reducing noise generated in a duct for a fluid. As shown in Fig. 7, several rectifying members such as a rectifying grid 32, a first rectifying net 33 and a second rectifying net 34 are spaced apart from each other and they are attached upstream in a duct 30 to serve as a rectifying part 31. The rectifying grid 32 has a number of small holes or capillaries having a form of a honeycomb shape, a circular shape or a rectangular shape in cross section and they are provided in the axial direction of the duct 30 (Z axis direction). The rectifying grid 32, the first rectifying net 33 and the second rectifying net 34 have a function of adjusting the velocity of the fluid in the direction of the Z axis (see page 14, lines 2-10 in the specification).

Independent claim 1 currently recites "said rectifying grid placed in said duct downstream of and spaced from said first rectifying net". Independent claim 1 also currently recites

"said second rectifying net placed in said duct downstream of and spaced from said rectifying grid".

These features are not shown or suggested by Christenson.

As shown in FIG. 1 of Christenson, a turbulent airflow control device 20 removes large structured turbulence moving parallel to the duct 18 sidewalls and/or the swirling of air in the duct 18 tangential to the duct 18 sidewalls. The turbulent airflow control device 20 can comprise a perforated plate 22, a honeycomb section 24, a screen 28, or a combination thereof. The perforated plate 22 breaks up turbulence moving down the duct 18 and weak swirls that exist in the duct 18. The honeycomb section 24 removes both weak and strong swirls.

Christenson also discloses that an improvement in coherence is also observed with just the honeycomb section 24 installed. The pressure loss associated with the honeycomb section 24 is significantly less than that of the perforated plate 24, screen 28 (of Fig. 3) or the combination of plate 22, screen 28 and honeycomb section 24 (see column 2, lines 39-44).

Christenson also discloses that the honeycomb section 24 alone may be installed and that the honeycomb only configuration

is the preferred configuration due to its low pressure drop (see column 3, lines 48-49).

Christenson also disclose that the plate 24, the screen 28 and the honeycomb section 24 are disposed adjacent to each other and there is no disclosure of any spacing between each of these elements.

Christenson does not disclose the rectifying grid placed in the duct downstream of and spaced from the first rectifying net. Also, Christenson does not disclose a second rectifying net placed in the duct downstream of and spaced from the rectifying grid.

Applicants respectfully submit that there is no teaching or suggestion for providing a space between the first rectifying net and the rectifying grid. Further, applicants respectfully submit that there is no teaching or suggestion for providing a space between the second rectifying net and the rectifying grid.

If there is no space between the rectifying grid and the second rectifying net, air flow passed through the rectifying grid further passes the second rectifying net and turbulence can occur at the downstream side. On the other hand, in the present invention, the second net is provided spaced from the rectifying

grid, thereby air flow stagnates in the space therebetween. Then the velocities of the air flow are readjusted to be a laminar flow when they pass through the second rectifying net. Therefore, applicants respectfully submit that the structure of the present invention can achieve a higher coherence between the sound wave in the vicinity of microphone and that of the error detection microphone. Moreover, the active noise control system can achieve an excellent noise reduction effect.

Also, applicants respectfully submit that Christenson teaches away from the presently claimed invention because Christenson teaches that a significant improvement in coherence is observed with just the honeycomb section 24 installed. Moreover, Christenson teaches that the pressure loss associated with the honeycomb section is significantly less than that of the perforated plate/screen or the combination of plate/screen and honeycomb section. The honeycomb only configuration is the preferred configuration due to its low pressure drop. Since Christenson preferred only a honeycomb section in the duct to control noise, applicants respectfully submit that the device of Christenson teaches away from adding a second rectifying net spaced from the rectifying grid. Therefore, applicants

respectfully submit that it would not have been obvious to modify Christenson to include a second rectifying net downstream of the rectifying grid for the purpose of improving its noise control function.

For these reasons, it is believed that Christenson does not teach or suggest the claimed features of the present invention. Therefore, it is respectfully submitted that claims 1 and 28-30 are allowable over Christenson.

New independent claim 31 has been added in the application and is similar to claim 1. New independent claim 31 additionally recites "said second rectifying net placed in said duct downstream of and spaced from said rectifying grid for readjusting a velocity of said fluid passing through a space between said rectifying grid and said second rectifying net". Applicants respectfully submit that this feature claimed in new claim 31 also defines over Christenson and the other prior art of record for the reasons discussed above. Allowance of this claim is also respectfully requested.

New dependent claims 32-34, which directly depend from independent claim 31, have been added in the application. The claimed features of new dependent claims 32-34 are the same as

dependent claims 28-30 respectively. Since new dependent claims 32-34 directly depend from independent claim 31, allowance of these claims is also respectfully requested.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is now in condition for allowance and an action to this effect is respectfully requested.

If there are any questions or concerns regarding the amendments or these remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Respectfully submitted,

Date: July 19, 2006

Randolph A. Smith
Reg. No. 32,548

SMITH PATENT OFFICE
1901 Pennsylvania Ave., N.W.
Suite 901
Washington, DC 20006-3433
Telephone: 202/530-5900
Facsimile: 202/530-5902
Kakuhari071906